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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,742

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Daisuke Endo

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04/28/2011

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EXAMINER

MARKS, JACOB B

ART UNIT

PAPER NUMBER

1729

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,742	<b>Applicant(s)</b> ENDO ET AL.	
	<b>Examiner</b> Jacob Marks	<b>Art Unit</b> 1729	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-8,13-21 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 19, and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 13-15, 17, 18, 21, and 24-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1, 4-8, 13-21, and 24-29 are pending. Claims 6-8, 19, and 20 are withdrawn. Claims 2, 3, 9-12, 16, 22, and 23 are cancelled.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the claim limitation “in terms of oxide” broadens the scope of the independent claim 1.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4, 5, 13-15, 17, 18, 21, and 24-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, applicant claims a positive active material wherein Gd, Ce, and Yb are in elemental form and not incorporated into the base particles, but provides no method to make the claimed composition. The entire experimental section of the

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specification is devoted to the formulation of a positive active material wherein a Gd, Ce, or Yb oxide is not incorporated into the base particles. However, applicant provides no guidance as to how to make the claimed formulation where Gd, Ce, or Yb are elements and not oxides.

As such, one of ordinary skill in the art would have to engage in undue experimentation in order to make and use applicants claimed invention. See, *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Circ. 1988); see also, MPEP § 2164.01. MPEP 2164.01(a) sets forth the following factors, summarized from *In re Wands*, which should be considered when determining whether the claimed invention would require undue experimentation. The factors are as follows:

(A) the breadth of the claims; (B) the nature of the invention; (C) the state of the prior art; (D) the level of one of ordinary skill; (E) the level of predictability in the art; (F) the amount of direction provided by the inventor; (G) the existence of working examples; (H) and the quality of experimentation needed to make and use the invention based on the content of the disclose.

The factors are addressed in order. As to factor A, the claim recites a markush group that limits the possible materials not incorporated in the base active material to the elemental forms of Gd, Ce, and Yb. Though the scope of the claim is relatively narrow, this rejection is based more on the lack of a method of how to make and use the invention than a scope that encompasses too much.

As to factors B and E, the field of material science is an unpredictable art. Applicant provides no guidance as to how to make a positive active material

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where elemental Gd, Ce, and Yb are not incorporated in the base particles. The process of preventing the Gd, Ce, or Yb from being incorporated into the base particles is complicated and involves precipitation based on the solubility of the base of the claimed elements. Such a method could not be used to provide the elemental form of Gd, Ce, or Yb in this configuration. As such, this factor militates strongly against a finding of enablement.

As to factor C, the prior art of record, Chen et al. (CN 1416189), disclose the use of a metal oxide cladding in a battery active material. The Chen reference is also entirely devoted to the formulation of the oxide, not the elemental Gd, Ce, or Yb. As such, this factor weighs in favor of finding a lack of enablement.

As to factor D, the level of ordinary skill in the art would be a person holding a bachelors degree in chemical engineering, material science, or chemistry. This factor does not weigh for or against a finding of enablement.

As to factors F and G, the applicant's specification provides working no working examples of elemental Gd, Ce, or Yb that are not incorporated into the base particle. In the specification the inventors, in fact, go to great lengths prove that their experimental formulation is consistent with that of an oxide which was not incorporated in the base particle. The inventors performed x-ray spectroscopy, inductively coupled plasma, and x-ray diffractometry on the active material (pg. 38). It appears that there is a great deal of experimentation required to prevent the material from being incorporated into the base particle. Though applicants have found a method for manufacturing the oxide, there is no

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method provided for the elemental forms of Gd, Ce, and Yb. This factor militates against a finding of enablement.

As to factor H, one of ordinary skill in the art has no guidance as to how to make a positive active material with Gd, Ce, or Yb not incorporated in the base active material. As stated before, the applicants method of preventing the oxides of Gd, Ce, and Yb from being incorporated into the base active material involves the precipitation of the base of Gd, Ce, and Yb, where the ph is controlled. After the solid base particles are deposited, the entire formulation is sintered at 400 °C for 5 hours (pg. 37 and 38). Roasting a base metal in such a manner is known to convert it into the oxide of the base. This method could not be used to manufacture the elemental form of Gd, Ce, or Yb because it involves the use of an already oxidized form of the element (i.e. the base of the element). As such, one of ordinary skill in the art would have to come up with an entirely new experimental method to make the claimed invention. This factor weighs strongly in favor of finding that the invention is not enabled.

### ***Claim Rejections - 35 USC § 103***

The claim rejections under 35 U.S.C. 103(a) as being unpatentable over Shiozaki et al. (WO 03/044881) in view of Chen et al. (CN 1416189) on claims 1, 4, 5, 13-15, 17, 18, 21, and 24-29 is withdrawn in light of applicant's persuasive arguments.

***Response to Arguments***

Applicant's arguments with respect to claims 4, 5, 13-15, 17, 18, 21, and 24-29 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Marks whose telephone number is (571)270-7873. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ula Ruddock can be reached on 571-272-1481. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jacob Marks/

/Ula C Ruddock/  
Supervisory Patent Examiner, Art Unit 1729